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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,213	03/01/2004	Alastair M. Reed	P0943	3946
23735 7590 12/10/2007 DIGIMARC CORPORATION 9405 SW GEMINI DRIVE BEAVERTON, OR 97008			EXAMINER PERUNGAVOOR, SATHYANARAYA V	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 12/10/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/791,213	Applicant(s) REED, ALASTAIR M.	
	Examiner Sath V. Perungavoor	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/18/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

[1] A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 18, 2007 has been entered.

Response to Arguments

[2] Presented arguments have been fully considered, but some are rendered moot in view clarifications set forth below to the previously made rejections.

Claim Rejections - 35 USC § 103

Summary of Arguments:

Regarding claim 1, applicant argues that Lawler does not adjust values to convey a digital watermark.

Examiner's Response:

Examiner respectfully disagrees.

Regarding claim 1, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Accordingly, Examiner maintains the rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[3] Claims 1-5 and 8-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daly-819 [US 5,905,819] which incorporates by reference Daly-483 [US 5,394,483] in view of Lawler [NPL document titled, "Know thy enemy: understanding dot gain and its effects"].

Regarding claim 1, Daly-819 meets the claim limitations, as follows:

A method of digital watermarking an image [fig. 6] comprising: adjusting the image (*i.e.* 12-second image) in accordance with values in a first representation (*i.e.* 36-CSF) [fig. 6; col. 3, ll. 45-48; col. 4, ll. 31-40]; determining values (*i.e.* values below the visual threshold) to convey a digital watermark (*i.e.* 10-hidden image) in the adjusted image (*i.e.* 36-CSF) [fig. 6; col. 3, ll. 25-31; col. 4, ll. 59-67]; adjusting the values (*i.e.* values below the visual threshold) in accordance with a second representation (*i.e.* 46-CSF⁻¹) [fig. 6; col. 5, ll. 1-5; col. 3, ll. 45-48] and combining (*i.e.* 18) the adjusted change values (*i.e.* 46-CSF⁻¹) and the image to produce a digital watermarked image (*i.e.* 20-combined image) [fig. 6; col. 5, ll. 5-15].

Daly-819 does not explicitly disclose the following claim limitations:

The first and second representation being utilized by a printing process.

However, in the same field of endeavor Lawler discloses the deficient claim limitations, as follows:

A first (*i.e.* *fig. 6*) and second (*i.e.* *fig. 7*) representation being utilized by a printing process.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Daly-819 with Lawler to apply a forward and backward dot gain curve to the image, the motivation being to develop quality images by accounting for dot gain effects [*page 2, col. 2, para. 4; page 4, col. 1, para. 4*].

Regarding claim 2, Lawler meets the claim limitations, as follows:

The method of claim 1, wherein the first representation comprises a forward dot gain curve [*fig. 6*].

Regarding claim 3, Lawler meets the claim limitations, as follows:

The method of claim 2, wherein the second representation comprises a backward dot gain curve [*fig. 7*].

Regarding claim 4, Lawler meets the claim limitations, as follows:

The method of claim 3 wherein the backward dot gain curve comprises an inverse of the forward dot gain curve [*fig. 7*].

Regarding claim 5, Lawler meets the claim limitations, as follows:

The method of claim 1 wherein the printing process comprises an offset printing press [page 1, col. 2, para. 1].

Regarding claim 8, Daly-819 meets the claim limitations, as follows:

A method of steganographically hiding a signal in an image [fig. 6] comprising: determining change values (*i.e. values below the visual threshold*) to represent the signal (*i.e. 10-hidden image*) in the image [fig. 6; col. 3, ll. 25-31; col. 4, ll. 59-67]; and altering color values (*i.e. pixel values*) of the image by an amount (*i.e. 36-CSF*) to achieve the change values [fig. 6; col. 3, ll. 45-48; col. 4, ll. 31-40], wherein the image includes the signal (*i.e. 10-hidden image*) steganographically embedded therein when printed with the printing process [col. 3, ll. 45-48].

Daly-819 does not explicitly disclose the following claim limitations:

wherein the amount includes a compensation for a variation in a relationship of an input color value and at least one of ink and dye provided by a printing process to represent the input color value, and

However, in the same field of endeavor Lawler discloses the deficient claim limitations, as follows:

wherein the amount includes a compensation (*i.e. forward dot gain curve*) for a variation in a relationship of an input color value and at least one of ink and dye provided by a printing process to represent the input color value [fig. 6].

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Daly-819 with Lawler to apply a forward dot gain curve to the image, the motivation being to develop quality images by accounting for dot gain effects [page 2, col. 2, para. 4; page 4, col. 1, para. 4].

Regarding claim 9, Lawler meets the claim limitations, as follows:

The method of claim 8, wherein the printing process comprises an offset printing process [page 1, col. 2, para. 1].

Regarding claim 10, Daly-819 meets the claim limitations, as follows:

The method of claim 8, wherein the steganographically hiding comprises digital watermarking [col. 1, ll. 14-16].

Regarding claim 11, Daly-819 meets the claim limitations, as follows:

The method of claim 8, further comprising printing the image, wherein the printed image includes the signal steganographically embedded therein [col. 3, ll. 45-48].

Regarding claim 12, Daly-819 meets the claim limitations, as follows:

A method of processing an image to compensate for variation in a printing process [fig. 6], wherein the image includes a plurality of color values (*i.e. pixel values*), said method comprising: receiving a representation (*i.e. $46-CSF^{-1}$*) of a variation in a relationship of an input color value (*i.e. pixel value*) and human

visual system to represent the input color value [fig. 6; col. 5, ll. 1-5]; determining change values (*i.e. values below the visual threshold*) needed to alter the image to accommodate a digital watermark embedded (*i.e. 10-hidden image*) therein [fig. 6; col. 3, ll. 25-31; col. 4, ll. 59-67]; adjusting the change values (*i.e. values below the visual threshold*) with the representation (*i.e. 46-CSF⁻¹*) [fig. 6; col. 5, ll. 1-5; col. 3, ll. 45-48]; and modifying (*i.e. 18*) the image with the adjusted change values (*i.e. 46-CSF⁻¹*) to accommodate the digital watermark and to compensate for the variation [fig. 6; col. 5, ll. 5-15].

Daly-819 does not explicitly disclose the following claim limitations (emphasis added):

Receiving a representation of a variation in a relationship of an input color value and at least one of ink and dye provided by the printing process to represent the input color value;

However, in the same field of endeavor Lawler discloses the deficient claim limitations, as follows:

Receiving a representation of a variation in a relationship of an input color value and at least one of ink and dye provided by the printing process to represent the input color value [fig. 7].

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Daly-819 with Lawler to apply a backward dot gain curve to the image, the motivation being to develop quality images by accounting for dot gain effects [page 2, col. 2, para. 4; page 4, col. 1, para. 4].

Regarding claim 13, Lawler meets the claim limitations, as follows:

The method of claim 12, wherein the printing process comprises an offset printing press *[page 1, col. 2, para. 1]*.

Regarding claims 14-15, all claim limitations are set forth and rejected as per discussion for claims 12, 1 and 8.

[4] Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daly-819 which incorporates by reference Daly-483 in view of Cass [US 6,023,525]

Regarding claims 6 and 7, Daly-819 meets the claim limitation as set forth in claim 1.

Daly-819 does not explicitly disclose the following claim limitations:

The method of claim 1 wherein the image is watermarked using a scale to black technique.

The method of claim 1 wherein the image is watermarked using a scale to white technique.

However, in the same field of endeavor Cass discloses the deficient claim limitations, as follows:

A method of modifying an image using a scale to black or white technique *[col. 5, ll. 14-25; It acknowledged that "scale to black" or "scale to white" techniques have special meaning in the specification. However, the scope of these techniques is unclear, i.e. what steps from the specification should be imported into the claims.]*.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Daly-819 with Cass to watermark using scale to black/white techniques, the motivation being minimize human viewer response and maximize scanner response to color changes [col. 5, ll. 20-25].

Contact Information

[5] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Sath V. Perungavoor whose telephone number is (571) 272-7455. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Matthew C. Bella whose telephone number is (571) 272-7778, can be reached on Monday to Friday from 9:00am to 5:00pm. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

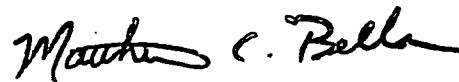
Dated: December 6, 2007

Matthew C. Bella

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Sath V. Perungavoor
Telephone: (571) 272-7455

A handwritten signature in black ink, reading "Matthew C. Bella". The signature is fluid and cursive, with the first name "Matthew" and last name "Bella" clearly distinguishable.

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600